

DOCUMENT RESUME

ED 046 339

HE 001 918

AUTHOR Fougeres, Viviane, Comp.
TITLE Programme on Institutional Management in Higher Education. List of Documents.
INSTITUTION Organisation for Economic Cooperation and Development, Paris (France).
REPORT NO CFRI-IM-70-14
PUB DATE 1 Jul 70
NOTE 60p.
EDRS PRICE MF-\$0.65 HC-\$3.20
DESCRIPTORS Administrative Organization, *Bibliographies, Educational Planning, Foreign Countries, *Higher Education, *Management, *Planning, Resource Allocations, *Systems Approach

ABSTRACT

The documents on university management listed in this report were collected by the Centre for Educational Research and Innovation. The documents are divided into 3 sections: (1) higher education planning, management and organization; (2) institutional management techniques applied to specific institutions; and (3) reference documents. Within these sections the documents are listed according to country and institution or organization of origin. (AF)

ED0 46339

ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

RESTRICTED

Paris, 1st July, 1970

Centre for Educational
Research and Innovation

Or. Eng.

CERI/IN/70.14

PROGRAMME ON INSTITUTIONAL
MANAGEMENT IN HIGHER EDUCATION

LIST OF DOCUMENTS

(Note by the Secretariat)

This list was compiled by Madame Viviane Fougères, Consultant to the Centre for Educational Research and Innovation under the supervision of Dr. Abdul G. Khan of the C.E.R.I. Secretariat. The current preliminary version is being circulated among the Centre's staff and among the 'Joint Projects' teams. Others outside the Programme may also find the compilation useful for their own work.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE
PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION
POSITION OR POLICY

712661716

INTRODUCTION

Over the last several months, the Centre collected a number of documents relevant to the Programme on Institutional Management in Higher Education. In addition to making requests for documents through the mail, the staff of the Centre have personally obtained the documents during their various missions to Member countries. The collection was particularly boosted as a result of a two-man C.E.R.I. Mission to Canada and the United States during February 1970.

The purpose of this List is to disseminate information on current work in the field of university management in Member countries. A vast number of the documents, particularly from the United States, are hard to come by in other Member countries. Several of these have not been published or widely circulated. Nevertheless, these documents constitute important reference material. These will be useful for the research and development effort in the field of university management at the Centre and in the Joint Projects, as well as elsewhere.

The Centre proposes to continue its effort to collect recent documents in the field. A bi-monthly addendum to this document will be issued which will include new acquisitions. We also propose to complete the annotations for the items included in future publication.

The documents are arranged under three broad headings. The first section deals with Higher Education Planning, Management and Organisation. The second section deals with Institutional Management Techniques Applied to Specific Institutions. The third section includes Reference Documents. University calendars and handbooks and programme descriptions are not included.

A detailed classification scheme used here is shown below.

CLASSIFICATION OF DOCUMENTS

1. Higher Education Planning, Management and Organisation

(a) North America

(i) United States

(ii) Canada

(b) Western Europe

(c) Documents prepared by international organisations

(i) Organisation for Economic Co-operation and Development.

- Centre for Educational Research and Innovation, Institutional Management in Higher Education.

- Other O.E.C.D.

(ii) Other international organisations

(In this section, the documents are listed alphabetically by authors except where the document is clearly identified as an institutional effort.)

2. Institutional Management Techniques Applied to Specific Institutions

(a) North America

(i) United States

(ii) Canada

(b) Western Europe

(c) Documents prepared by international organisations

(In this section, the documents are generally listed alphabetically by institution. Wherever institutional identification was not possible, the documents are listed by country.)

3. Reference Documents

(In this section, documents are listed alphabetically by author.)

The reader is referred to two previous documents of the O.E.C.D., "Systems Analysis for Educational Planning, Selected Annotated Bibliography, O.E.C.D., Paris, 1969, pp. 219, and "Directory of Current Educational Models in O.E.C.D. Member Countries, Paris, November 1969, pp. 90, DAS/EID/69.79. Items listed in both these documents are also available at the Centre for Educational Research and Innovation but are not included in this List.

The recipients of this List are requested to send their comments, suggestions for inclusion of additional items and annotations of their own publications included here. Furthermore, the Secretariat will appreciate receiving two copies of documents on the subject of institutional management in higher education from individuals and organisations in Member countries of the O.E.C.D.

Please address your communications to:

Madame Viviane Fougères,
C.E.R.I.,
Organisation for Economic Co-operation and
Development,
2, rue André Pascal,
Paris XVI, France.

CONTENTS

	<u>Page</u>
1. Higher Education Planning, Management and Organisation.	
(a) North America	5
(i) United States	5
(ii) Canada	15
(b) Western Europe	17
(c) Documents prepared by international organisations	23
2. Institutional Management Techniques Applied to Specific Institutions.	
(a) North America	29
(i) United States	29
(ii) Canada	45
(b) Western Europe	47
(c) Documents prepared by international organisation	53
3. Reference Documents.	

1. Higher Education Planning, Management and Organisation

(a) North America

(i) United States

American Council on Education (ACE)

ACE, College and University Business Administration, Washington, D.C., 1968, pp. 289.

ACE, "Recent Findings from the ACE Research Program Implications for College Choice and Admissions", College and University, Washington, D.C., Summer 1968, pp. 341-356.

A.W. Astin, R.J. Panos, J.A. Creager, "A Program of Longitudinal Research on the Higher Education System", ACE Research Reports, Vol. 1, N° 1, 1966 pp. 42.

A.W. Astin, R.J. Panos, J.A. Creager, "Implications of a Program of Research on Student Development in Higher Education", ACE Research Reports, Vol. 2, N° 6, 1967, pp. 38.

A.E. Bayer, A.W. Astin, R.F. Boruch, "Social Issues and Protest Activity: Recent Student Trends", ACE Research Reports, Vol. 5, N° 2, 1970, pp. 33.

A.W. Astin, "A Program of Research on Student Development", The Journal of College Student Personnel, Washington, D.C., September 1968, pp. 299-307.

A.E. Bayer, A.W. Astin, R.F. Boruch, J.A. Creager, "Users' Manual, ACE Higher Education Data Bank", ACE Research Reports, Washington, D.C., Vol. 4, N° 1, 1969, pp. 90.

A.E. Bayer, D.M. Drew, A.W. Astin, R.F. Boruch, J.A. Creager, "The First Year of College: a Follow-Up Normative Report", ACE Research Reports, Washington, D.C., Vol. 5, N° 1, February 1970, pp. 72.

J.A. Creager, A.W. Astin, R.F. Boruch, A.E. Bayer, "National Norms for Entering College Freshmen - Fall 1968", ACE Research Reports, Washington, D.C., Vol. 3, N° 1, 1968, pp. 92.

J.A. Creager, A.W. Astin, R.F. Boruch, A.E. Bayer, D.M. Drew, "National Norms for Entering College Freshmen - Fall 1969", ACE Research Reports, Washington, D.C., Vol. 4, N° 7, 1969, pp. 92.

J.A. Croager, C.L. Sell; "The Institutional Domain of Higher Education: a Characteristics File for Research", ACE Research Reports, Washington, D.C., Vol. 1, N° 6, 1969, pp. 81.

R.L. Ackoff, "Toward an Idealized University", Management Science, New York, Vol. 15, N° 4, December 1968, pp. 121-131.

Advanced Systems Laboratories, "A Progress Report on the Development of a Generalized Educational Management System" New York Institute of Technology, Old Westbury, New York pp. 35.

M.B. Allen, C.H. Daniel, D.P. Jones, "An Exploratory Study of the Physical Facilities Requirements of Institutions of Higher Learning", Final Report, National Science Foundation Project, Washington, D.C., 25th August, 1969, pp. 208 and diagrams.

P. Alper, C.S. Smith, "Control Strategies for an Educational Planning Problem", Journal of the Canadian Operational Research Society, Toronto, November 1967, pp. 159-174.

By means of a simple example relating bottlenecks and performance indices it is shown how ideas from control theory may be applied to educational planning. Two different criteria for several different a priori distributions are shown to lead to markedly different optimal sequences of decisions. These optimal strategies are compared with non-optimal strategies which in some sense resemble what educational planners in the far more complex real world would be forced to do. The robustness of the solutions is tested by demonstrating that the optimum solution for one criterion can yield very poor results in another criterion.

J.R. Armstrong, "A Theoretical Model for Research in Education", U.S. Department of Health, Education and Welfare, Washington, D.C., 17th February, 1967, pp. 8.

G. Bélanger, "L'Université, une Perspective Economique", L'Actualité Economique, Montreal, October/December, 1969, pp. 488-498.

G.W. Baughman, "The Impact of Management Information Systems on Organisation and Decision Making in Institutions of Higher Education", Ohio State University, Columbus, Ohio, undated, pp. 14.

G.W. Baughman, R. Brady, "Towards a theory of University Management", Management Information Systems in Higher Education: the state of the art, Duke University Press, Durham, North Carolina, 1969, pp. 3-28.

Bureau of Education for the Handicapped, Division of Research, "A Conceptual Model for Educational Research Support", Washington, D.C., undated, pp. 13.

J.C. Calhoun, D.F. Morrison, "A Report on Total Information Systems for Colleges and Universities", Texas A. and M. University System, undated, pp. 73 and Appendices.

A.A. Canfield, C. Stack, "An Instructional Systems Approach", Howard and Smith, Inc. 1967, Educational Systems Development Division, Royal Oak, Michigan, pp. 24.

A.M. Cartter, "The Economics of Higher Education", Contemporary Economic Issues, New York, 1969, pp. 145-184.

A.M. Cartter, "Reflections on the Cost of Graduate Education", New York, August 1969, pp. 13.

A.M. Cartter, R.L. Farrell "Academic Labor Market and the Draft", The Economics and Financing of Higher Education in the United States, October 1969, pp. 357-374.

J.A. Casasco, "Current Techniques in College and University Planning", Educational Facilities Laboratory, New York, April 1969, pp. 119.

R.G. Cope, "College Press and Dropouts", paper presented at American Educational Research Association, Los Angeles, February 1969, pp. 27.

R.G. Cope, "Can Psychological Variables used by Economists Aid in Predicting College Enrollments and Persistence?", College and University, Fall 1969, pp. 35-40.

J.W. Dickey, G.R. Conner, J. Hopkins, "Campus Building Arrangements Using the Branch and Bound Technique with Subjectively Established Bounds", Virginia Polytechnic Institute, Blacksburg, Virginia, undated, pp. 18.

T. Drews, S. Drews, "HEGIS: a Report on Status and Plans", Management Information Systems in Higher Education: the state of the art, Duke University Press, Durham, North Carolina, 1969 pp. 79-108.

Educational Facilities Laboratory, "A College in the City: an Alternative", New York, March 1969, pp. 42.

P. Feldman, S. Hoenack, "Private Demand for Higher Education in the United States", U.S. Congress Hearings, Joint Economic Committee, 91st Congress, 1st Session, Washington, D.C., 1969, pp. 375-395.

R.S. Frew, V.K. Handa, G.N. Soulis, "An Approach to Planning Physical Environments", presented at 14th International Meeting of the Institute of Management Science (TIMS), Mexico City, August 1967, pp. 10.

E.G. Guba, "The Role of Educational Research in Educational Change: the United States", National Institute for the Study of Educational Change, Washington, D.C., July, 1967, pp. 100

P.W. Hamelman, "Missions, Matrices and University Management" Academy of Management Journal, March 1970, pp. 35-47.

P.W. Hamelman, "Planning and Analysis for Higher Education: Promises and Pitfalls", presented at Joint Meeting of the Operations Research Society of America, 20th June, 1969.

R.G. Hewitt, "Grades: a Need for Discussion", University of Massachusetts, Amherst, Mass., February 1968, pp. 8.

R.G. Hewitt, "The Status of Pass/Fail, Options at 22 Colleges and Universities", University of Massachusetts, Amherst, Mass. November 1967, pp. 5 and Appendices.

A.G. Holzman, W.R. Turkes, "Summary; Optimal Scheduling in Educational Institutions" University of Pittsburgh, Pittsburgh, Pennsylvania, September 1961-December 1963, pp. 14.

R.L. Johnson, "Introduction to Programs Evaluation and Review Technique, A System for the Management of Educational Programs" Stanford Research Institute, Stanford, Cal., March 1968, pp. 20.

J.A. Kershaw, E.M. McKean, "Systems Analysis and Education", Rand Corporation, Santa Monica, Cal., October 1959.

J.B. Kenney, "An Investigation into the Capabilities of the Generalized Academic Simulation Program (GASP) to Construct Three Kinds of Secondary School Time Tables", presented at the Seminar of Association for Educational Data System, 1968, pp. 20.

L.L. Lins, "Methodology of Enrollment Projections for Colleges and Universities", American Association of Collegiate Registrars and Admissions Officers, Washington, D.C., March 1960, pp. 67.

Various methods by which the responsible officials of colleges and universities might make projections of enrollment for their respective institutions are presented in this report. The point is made that institutional enrolment projection is not a simple assignment. Many factors must be considered, analyzed, and, if possible, controlled in order to do the best job of forecasting. Before making an enrollment projection, each institution should define its aims and purposes in order to identify its long range goals. The enrollment projection

techniques include a discussion of - (1) curve fitting, (2) ratio method, (3) cohort-survival method, (4) combined ratio and cohort-survival method, and (5) correlation analysis. Short range enrolment estimates for budget purposes and educational planning are discussed as are long range projection based on increasing population. A final chapter presents a brief review of guiding principles to aid the person designing tables or graphs for presentation. A substantial bibliography of books, periodicals, and reports concerned with enrolment projection is included.

J. Minter, B. Lawrence, "Management Information Systems: Their Development and Use in the Administration of Higher Education", Western Interstate Commission for Higher Education, Boulder, Colorado, October 1969, pp. 7.

J. Murphy, R. Sutter, "School Scheduling by Computer, the Story of GASP" Educational Facilities Laboratory, New York, 1964, pp. 50.

National Centre for Educational Statistics

M.O. Chandler, "Earned Degrees Conferred: 1966-67, Part B, Institutional Data", Washington, D.C., 1968, pp. 186.

M.O. Chandler, "Students Enrolled for Advanced Degrees, Part B, Institutional Data", Washington, D.C., 1968, pp. 178.

M.O. Chandler, M.C. Rice, "Opening Fall Enrolment in Higher Education, 1967", Washington, D.C., 1967, pp. 136.

H.L. Dahnke, "Facilities Classifications and Inventory Procedures for Institutions and State Agencies", undated, Washington, D.C., pp. 83.

M.E. Hooper, M.O. Chandler, "Earned Degrees Conferred 1967-68, Part A: Summary Data", Washington, D.C., May 1969, pp. 62.

M.E. Hooper, M.O. Chandler, "Earned Degrees Conferred 1967-68, Part B: Institutional Data", Washington, D.C. June 1969, pp. 263.

P.F. Mertins, "Financial Statistics of Institutions of Higher Education: Student Financial Aid: 1965-1966", Washington, D.C., 1968, pp. 63.

P.F. Mertins, "Financial Statistics of Institutions of Higher Education: Property 1965-66", Washington, D.C. 1969, pp. 123.

P.F. Mertins, "Financial Statistics of Institutions of Higher Education: Property 1966-67", Washington, D.C. 1967, pp. 132.

P.F. Mertins, "Financial Statistics of Institutions of Higher Education: Current Funds Revenues and Expenditures 1965-66", Washington, D.C., January 1969, pp. 71.

N.A. Osso, C.T. Roberts, "Higher Education Facilities Classification for Inventory Procedures Manual", Washington, D.C., 1968, pp. 102.

B. Price, "Library Statistics of Colleges and Universities, Data for Individual Institutions, Fall 1967", Washington, D.C., June 1969, pp. 346.

L.W. Ramsey, "Institutions of Higher Education: Index by State and Congressional District, July 1969", Washington, D.C.

K.A. Simon, W.V. Grant, "Digest of Educational Statistics" 1969 Edition, Washington, D.C., September 1969, pp. 128.

K.A. Simon, M.G. Fullam, "Projections of Educational Statistics to 1977-78", Washington, D.C. 1969, pp. 139.

"Definitions of Student Personnel Terms in Higher Education", Washington, D.C., 1963, pp. 60.

"Questionnaires for Institutions of Higher Education" Washington, D.C. (undated).

"Manual of Academic Courses of Study" (Draft), Washington, D.C., unpublished.

The National Science Foundation, National Institutes of Health, "Final Report on the Project to Devise and Test Simplified Adequate Systems of Measuring and Reporting Financial Manpower Facilities, Research and other Activities in Colleges and Universities", Washington, D.C., undated.

New York Institute of Technology, "Generalized Educational Management System", New York, April 1969.

Peat, Marwick and Mitchell "Computer Assisted Planning for Colleges and Universities", New York, undated, pp. 12 and tables.

Peat, Marwick and Mitchell "I.B.M. Diagramming and Charting Worksheet, RAPID", New York, undated, pp. 20.

A. Reisman, M.I. Taft, "On a Computer-Aided Systems Approach to Personnel Administration", Operations Research Department, Technical Memorandum N° 147, Case Western Reserve University, Cleveland, Ohio, December 1968, pp. 16.

A. Reisman, M.I. Taft, "A Systems Approach to the Evaluation and Budgeting of Educational Programs", forthcoming in Socio-Economic Planning Sciences, pp. 161.

A. Reisman, M.I. Taft, "The Generation of Doctorates and their Feedback into Higher Education", Socio-Economic Planning Sciences, 1969, Vol. 2, pp. 473-486, Pergamon Press, Printed in Great Britain.

The dynamic effects of alternative manpower policies and programs can be "pretested" in a computer based simulation. It is generally recognized that the production of Doctorates depends to a large degree on the Doctorate-holding faculty. Because the Doctorate holders are in great demand by the other sectors of the economy, a circular or a "feedback" situation exists. The problem is further complicated by the availability of developed student talent and by various socio-economic conditions existing at different periods of time within two or three decades prior to the time a study is made.

This paper attempts to develop a conceptual and a mathematical model to study the production of Doctorates, Masters' and Baccalaureate degrees and their feedback into higher education. The model consisting of over 200 non-linear difference equations is programmed for computer simulation and validation against historical data. Currently simulation is used to describe what has happened in the past. Once this phase is accomplished, the model can be used to prescribe what will happen in the future with a fair level of confidence.

P.J. Runkel, "Some Recent Ideas in Research Methodology", University of Oregon, Eugene, Oregon, March 1965, pp. 39.

This paper was presented at a conference on "New Directions in Research on Educational Administration". Two schemes of research methodology were discussed. The first idea was "facet design and analysis" originated by Louis Guttman.

Facet design was defined as a way of laying out a domain for research, while facet analysis enables one to test the validity of the assessment of the entire domain. The second scheme was "Theory of Data" by Clyde Coombs. This deals with the stages of gathering data out of observations and of making variables. The phases discussed in the "Theory of Data" here (1) selecting a domain of investigation, (2) recording observations, (3) converting observations into data, (4) classifying the individuals or objects (scaling), and (5) seeking relations among variables. These schemes were suggested to be of use as tools by those who will be developing new methods in research.

C.W. Scarborough, J.N. Daniel, "Management Use of Simulation in Long-Range Planning for Colleges and Universities", paper presented at TIMS/ORSA Meeting, San Francisco, 1st May, 1968, Peat, Marwick and Livingston, pp. 23.

T.W. Schultz, "Resources for Higher Education: an Economist's View", Journal of Political Economy, Chicago, 1968, pp. 327-347.

R.L. Sisson, "A Model of a School", University of Pennsylvania. University Park, Pennsylvania, September 1968, pp. 22.

R.L. Sisson, "Can we model the Educational Process?", Socio-Economic Planning Science, Vol. 2, 1969, pp. 109-119, Pergamon Press.

Stanford Research Institute, "Conceptual Design, Development and Test of an Integrated Management Information System", Menlo Park, California, March 1965, pp. 75 and Appendix.

M.I. Taft, "Design for Education: a Systems Approach, "Engineering, A Look Inward and a Reach Outward", University of Wisconsin, Milwaukee, Wisconsin, Summer 1967, pp. 41-60.

M.I. Taft, A. Reisman, "Computer Time Saving Applications in Economic Analysis: An Integrated Approach", Operations Research Department, Case Western Reserve University, Cleveland, Ohio, June 1969, pp. 37.

M.I. Taft, A. Reisman, "Toward Better Curricula through Computer Selected Sequencing of Subject Matter", Management Science, Vol. 13, N° 11, July 1967, Cleveland, Ohio, pp. 926-945.

I.B. Turksen, A.G. Holzman "Micro-Level Resource Allocation Models for Universities", 37th Annual Meeting, Operations Research Society of America, Washington, D.C., 20th-22nd April, 1970, pp. 40.

C.R. Walker, "The Theory and Practice of College Accounting", State Council of Higher Education for Virginia, Richmond, Va. August 1966, pp. 24.

Western Interstate Commission for Higher Education (WICHE)

Advanced Applied Management Information Systems in "Higher Education: Case Studies, WICHE-ACE Higher Education Management", Washington, D.C., April, 1969 pp. 15 and Exhibits.

"Management Information Systems: their Development and use in the Administration of Higher Education", Boulder, Colorado, October 1969, pp. 114.

"Focus on MIS: a report on the WICHE-ACE Higher Education Management Systems Seminar", Boulder, Colorado, October 1969, pp. 22.

"Project Description, SAM, Space Analysis Manual Project", Boulder, Colorado, November 1969, pp. 19.

"Data Element Dictionary: Students", Management Information Systems Program, Boulder, Colorado, June 1969, pp. 37.

"Data Element Dictionary: Staff", Management Information Systems Program, Boulder, Colorado, October 1969, pp. 38.

"Phase II Objectives and Time Schedule of the WICHE Management Information Systems Program", Boulder, Colorado, May 1969, pp. 9.

P. Wing, M.S. Blumberg, "Operating Expenditures and Sponsored Research at U.S. Medical Schools; An Empirical Study of Cost Patterns", 5th May, 1969, pp. 39. Berkeley, California.

D.R. Witner, "Research and Dissertation Proposal: the Value of College Education", Wisconsin State Universities, Milwaukee, Wisconsin, undated, pp. 97.

F.B. Womer, "The National Assessment of Educational Progress: Concept and Organization", Capsule, Winter 1970, Vol. 3, No 2, pp. 1-7, University of Michigan, Ann Arbor, Michigan.

(11) Canada

Universities of Ontario

Committee of Presidents of Universities of Ontario, "Brief to the Committee on University Affairs, Estimate of Operating Grants for 1970-71", Toronto, December 1969, pp. 54.

Committee of Presidents of Universities in Ontario, "Proposal for a Central Data Bank on Students and Resources of Ontario Universities", Toronto, 26th November, 1969, Part 1, pp. 71, Part 2, pp. 46.

Ontario Department of University Affairs, "Horizons, a Guide to Educational Opportunities in Ontario for 1970-71 Beyond the Secondary School Level", Toronto, undated, pp. 103.

Brief of the Structure and Operation of the Operating Grants Formula for the Provincially Assisted Universities of Ontario, 1967-68 through 1969-70", Toronto, undated, pp. 14.

W.P. McReynolds, "A Model for the Ontario Educational System", Toronto, November 1969, pp. 177.

The report has two principal parts; a general flow model of an educational system and its application to secondary school in Ontario, and a set of sub-models which are concerned with the transition by students from the final grade of secondary school to the first year of tertiary education.

In the first of these major sections, the mathematical structure of the basic flow model is introduced and some problems of implementation are mentioned. The basic model is demonstrated by its application to the system of secondary education in Ontario around 1960. The main data source, the Carnegie Study of Identification and Utilization of Talent in High School and College, is described, as is a unique method developed by the author called the "method of synthetic cohorts", by which the principal variables of the model, the transition proportions, are obtained. Matrices of transition proportions for males and females in the system are given, and simulated enrolments are compared with actual enrolments over a period of several years. The population is partitioned into various categories or classes on the basis of certain attributes such as sex, educational achievement of a parent, community, etc., and a separate transition matrix is given for each population category. Certain revealing differences between the matrices of the different groups are discussed.

Universities of Quebec

J. Bordeleau, A.P. Constandriopoulos, Nguyen Hung, "Etudes et Propositions en Vue de la Mise en Place d'une Echelle Normée de Traitement pour les Professeurs des Universités Québécoises", La Conférence des Recteurs et des Principaux des Universités de Québec, Montreal, January 1970, pp. 213.

The Conference of Rectors and Principals of Quebec Universities, "Interdependence and Harmonization, 1st Annual Report", Montreal, October 1969, pp. 82.

GRESIGU (Groupe de Recherches et d'Elaboration d'un Système d'Information de Gestion Universitaire), "A Management Information System for Universities", Montreal, December 1969, pp. 8.

(b) Western Europe

Battelle Institute, "Synthesis of Research Undertaken into Methodology with the EXPLOR 75 Programme", Geneva, undated, pp. 43.

L. Dotti, "Modèle Démographique - Méthodologie et Résultats" - Exposés de la 2ème Réunion Sociométrica 80, Battelle Institute, Geneva, November 1969, pp. 3-13.

A. Gabus, "Emploi, Education et Budgets-Temps", Exposés de la 2ème Réunion Sociométrica 80, Battelle Institute, Geneva, November 1969, pp. 14-26.

P. Daumard, "Le Prix de l'Enseignement en France", Calmann-Lévy, Paris, 1969, pp. 269.

D. Faure, "Transformations in Society and the Replanning of Education", Bilderberg Meetings, April 1970, pp. 27.

Ministère de l'Education Nationale, "Les Etudiants en France", Etudes et Documents, Paris, N° 12, 1968, pp. 76.

Arbeitsgruppe für Empirische Bildungsforschung, "Zur Genauigkeit des Angaben über die Soziale Herkunft des Schüler", Diskussionsbeiträge, Vol. 2, March 1970, pp. 40.

Deutscher Wissenschaftsrat, "Quantitative Überlegungen zur Struktur des Bildungswesens" (Quantitative Analysis of the Structure of Higher Education), Bonn, October 1969, pp. 165.

W. Krönig, "Higher Education Information System (HIS) for the Federal Republic of Germany and West Berlin", undated, pp. 22.

Ständige Konferenz der Kulturminister der Länder in der Bundesrepublik Deutschland, "The Development of Student Numbers and the Demand for Places at Universities until 1980" (in German), Bonn, October 1969, pp. 32 and appendices.

"Third Report of the Federal Government on Research", Federal Republic of Germany, Federal Ministry for Education and Science, Bonn, November 1969, pp. 107.

J. De Bruyn, "A Modern System of Educational Statistics, the Matrix Method", Central Bureau of Statistics, The Hague, undated, pp. 50.

Centraal Planbureau, "Planning and Development in the Netherlands", Vol. III, The Hague, 1969, pp. 186.

"Feasibility Study of Data Comparison System for Academic Institutions in Holland", Arthur D. Little, The Hague, April 1970, pp. 98.

"Information Schedule on Availability of Data, Forms A to D and Loose Sheets", Amsterdam, undated, pp. 16.

Report of the University Advisory Council, "Needs and Supplies until 1980" (Dalmulder Report), The Hague, July 1968, pp. 35.

Report of the University Advisory Council: "Definition of Personnel Needs of Universities", The Hague, July 1969, pp. 23.

Report of the University Advisory Council, "Definition of Personnel Needs of Universities", The Hague, February 1970, pp. 105.

Report of the University Advisory Council, "Organisation Structures and Procedures of Universities" (Maris Report), The Hague, February 1968, pp. 36.

Netherlands Central Bureau of Statistics, "Statistics on Primary Education 1968-69", The Hague, 1970, pp. 22.

Netherlands Central Bureau of Statistics, "Statistics on Vocational Training 1968-69, Technical Training", The Hague, 1969, pp. 95.

Netherlands Central Bureau of Statistics, "Statistics on Vocational Training, Agricultural Training", 1968-69, The Hague, 1969, pp. 20.

Netherlands Central Bureau of Statistics, "Statistics on Vocational Training 1968-69, Economic and Administrative Education, Elementary Secondary Education, Training for Tradespeople", The Hague, 1969, pp. 36.

Netherlands Central Bureau of Statistics, "Statistics on Vocational Training 1968-69, Teachers' Training Colleges", The Hague, 1969, pp. 24.

Netherlands Central Bureau of Statistics, "Statistics on Vocational Training, Domestic Science Training", The Hague, 1969, pp. 35.

Netherlands Central Bureau of Statistics, "Statistics on Socio-Pedagogic Training 1968-69", The Hague, 1969, pp. 20.

Netherlands Central Bureau of Statistics, "Statistics on Special Education 1968-69", The Hague, 1969, pp. 19.

Netherlands Central Bureau of Statistics, "An Educational Matrix of the Netherlands for 1967", The Hague, undated, pp. 16.

"The Posthumus Report", Higher Education and Research in the Netherlands, The Hague, Vol. XII, N° 4, 1968, pp. 24-28.

K. Posthumus, "The University", The Hague, October 1968, pp. 74.

G.H. Veringa, "Memorandum on Organisation of Universities and Colleges", The Hague, 27th June, 1969, pp. 14.

G.H. Veringa, "Memorandum on Organisation of Medical Schools", The Hague, September 1969, pp. 36.

M. Blaug, "The Rate of Return on Investment in Education in Great-Britain", The Manchester School, Manchester, September 1965, pp. 205-261.

M. Blaug, "The Private and Social Returns on Investment in Education: Some Results for Great-Britain", Journal of Human Resources, Summer 1967, Vol. II, N° 3, pp. 330-346.

This paper summarizes the results of two recent efforts to estimate rates of return to educational investment in Great Britain. Because there is no basic source of age-education-income data such as is available in the United States, the analysis employs data which are by-products of several surveys conducted for other reasons. Consequently, rather extensive adjustments in the data were required. The rate-of-return results indicate that, while there is little evidence of social overinvestment in higher education, some social underinvestment appears to exist at the secondary level. However, the private rates of return tend to exceed those for alternative investment forms.

M. Blaug, "The Productivity of Universities", Universities and Productivity Background Papers, Universities Conference, London, Spring 1968, pp. 19-28.

M. Blaug, M. Woodhall, "Productivity Trends in British Secondary Education", Sociology of Education, London, Winter 1968, Vol. 41, N° 1, pp. 1-35.

N. Bullock, P. Dickens, P. Steadman, "A Theoretic Basis for University Planning", Cambridge School of Architecture, Cambridge, April 1968, pp. 276.

The Committee of Vice-Chancellors and Principals of Universities of the United Kingdom, "Pilot Enquiry into the Use of Time by University Academic Staff, Spring Term 1969", London, 1969, pp. 30.

Department of Education and Science, "Educational Research Projects supported by the Department of Education and Science", London, 31st December, 1968, pp. 28.

Department of Education and Science and the British Council, "Scientific Research in British Universities and Colleges, 1968-69", London 1969, pp. 446.

J. Fielden, "Analytical Planning and Improved Resource Allocation in British Universities, A Critical Evaluation of American PPBS and its Potential in Great-Britain", University of London, November 1969, pp. 69.

J. Fielden, "University Management Accounting", Leverhulme Fellowship in Accountancy, University of London, February 1969, pp. 85.

M. Hall, "Research v. Industry", Higher Education Review, London, Vol. 1, N° 2, 1969, pp. 1-17.

P. Janmohamed (table compiled by), "Universities by Number" Sunday Times Magazine, London, November 1969.

R. Layard, J. King, "The Impact of Robbins", Higher Education Review London, Vol. 1, N° 1, 1968, pp. 7-25.

R. Layard, J. King, C. Moser, "The Impact of Robbins", Penguin Education Special, London 1969, pp. 153.

Local Government Operational Research Unit, Royal Institute of Public Administration, "Establishing the Accommodation Needs of a New School", Reading, July 1968, pp. 8.

London School of Economics, Higher Education Research Unit, "The First Five Years, 1964-1968", London, July 1969, pp. 45.

S. Merrett, "Student Finance in Higher Education", The Economic Journal, London, June 1967, pp. 289-302.

G.C. Moodie, "Manpower Planning and its Implications for Universities: Internal Decision-Making", Academic Consultative Conference, University of York, November 1968, pp. 17.

National Extension College, "University Intercommunication, The Nine Universities Research Project", Pergamon Press, London, August 1966, pp. 92.

National Foundation for Educational Research in England and Wales, "Current Researches in Education and Educational Psychology, 1961-1963", Upton Park, 1965, pp. 78.

H.J. Perkin, "New Universities in the United Kingdom", Case Studies on Innovation in Higher Education, O.E.C.D., Paris, 1969, pp. 247.

B. Thomas, J. Moxham, J. Jones, "A Cost-Benefit Analysis of Industrial Training", British Journal of Industrial Relations, London Vol. VIII, N° 2, July 1969, pp. 231-264.

G. Menges, G. Elstermann, "Forecasting and Planning the Structure of Personnel of a University", NATO Conference on Mathematical Models for the Management of Manpower Systems", Porto, September 1969.

M. Murteira, "The Demand for Higher Education in Portugal", Institute for Social Studies, Lisbon, June 1969, pp. 17.

"Goals for Higher Education", Discussion Paper, Stockholm 1969, pp. 60, (in Swedish).

"Higher Education, Function and Structure", Discussion Paper, Stockholm 1969, pp. 65, (in Swedish).

Swedish Finance Ministry, "Long-Term Budget 1969", Stockholm, 1969, pp. 38.

Swedish Finance Ministry, "Summary of Proposed Policy Bill 1969", Stockholm, 1969, pp. 138.

"Supplement to Proposed Policy Bill for Swedish Ministry of Education", Stockholm, 1969, pp. 499.

"Budget of the Ministry of Education, 1969/70", Stockholm, 1969, pp. 273.

"Report of the Chancellors of Swedish Universities on Work Done in PPBS, Report N° 1 and N° 2, Stockholm 1968 and 1970, (collection of mimeographed papers, in Swedish).

Swedish Ministry of Education, Collection of Mimeographed Documents on Higher Education in Sweden, Stockholm, 1969.

SIGMA (Science in General Management, Ltd.). "A Proposal for Application of Scientific Methods to Problems in the Yugoslavia Educational System", London, February 1966, pp. 38.

(c) Documents Prepared by International Organisations

(i) Organisation for Economic Co-Operation and Development

- Centre for Educational Research and Innovation (C.E.R.I.)

Institutional Management in Higher Education

"Institutional Management in Higher Education, Programme Description", CERI/IM/70.02, Paris, 29th January, 1970, pp. 4.

"Programme on Institutional Management in Higher Education, Preliminary Guidelines for Joint Projects", CERI/IM/69.01, Paris, 22nd October, 1969, pp. 4.

Programme on Institutional Management in Higher Education, First Meeting of Project Leaders on Institutional Management in Higher Education, Copenhagen, 5th and 6th November, 1969.

"Agenda", CERI/IM/69.03, Paris, 3rd November, 1969, pp. 2.

"List of Participants", CERI/IM/69.04(Rev.), Paris, 19th November, 1969, pp. 3.

"Summary of the Proceedings of the First Meeting of the Project Leaders on Institutional Management in Higher Education", CERI/IM/69.09, Paris, 10th December, 1969, pp. 15.

Abdul G. Khan, "General Outline", CERI/IM/69.05, Paris, 31st October, 1969, pp. 12.

G. Morton, "General Models for University Planning", CERI/IM/69.02, Paris, 3rd November, 1969, pp. 6.

K. Legg, "Note on the Extension of Work on an Analytical Approach to University Staff and Facilities Planning", CERI/IM/69.06, Paris, 3rd November, 1969 and Annex I, Paris, 27th November, 1969, pp. 28.

Programme on Institutional Management in Higher Education, "Suggestions for Submitting Detailed Statement of the Joint Projects", CERI/IM/69.10, Paris, 3rd December, 1969, pp. 14.

Programme on Institutional Management in Higher Education, "Information Note on the Purposes of the Proposed Questionnaire on University Management Systems", CERI/IM/69.08, Paris, 24th November, 1969, pp. 3.

Programme on Institutional Management in Higher Education,
"Pre-Test for the Proposed Questionnaire on University
System" (Information note), CERI/IM/69.11, Paris, 8th December,
1969, pp. 2.

Programme on Institutional Management in Higher Education,
"University Information Survey, 1968-69, Schedule B -
Staff and Facilities Requirements Questionnaire", CERI/IM/70.01,
Paris, 28th January, 1970, pp. 16 (also in French and German).

"Toelichting en aanwijzing voor instellingen van wetenschappelijk
onderwijs met betrekking tot het beantwoorden van formulier B:
vragenlijst voor personeelbezetting in hulpmiddelen", O.E.C.D.,
Paris, 5th May, 1970.

Programme on Institutional Management in Higher Education,
"Information Note", CERI/IM/69.07(1st Rev.), Paris, 19th
November, 1969, pp. 3.

"Essai de Mise au Point d'un Journal sur les Activités du
Corps Enseignant (Test Diary)", CERI/IM/70.03, pp. 28
(French only).

"Essai de Mise au Point d'un Journal sur l'Utilisation du
Temps des Etudiants (Test Diary)", CERI/IM/70.04, pp. 28
(French only).

"Centre for Educational Research and Innovation, Purposes,
Programmes, Progress", Paris, December, 1969, pp. 19 and
Annexes.

Programme on Institutional Management in Higher Education,
Second Meeting of Project Leaders on Institutional Management
in Higher Education, Bradford, 18th and 19th June, 1970.

A. Bottomley, "The Installation of Output Budgeting
or Planning Programming Budgeting Systems at the
University of Bradford, England", CERI/IM/70.05,
Paris, 11th June, 1970, pp. 5.

A. Jensen, "Some Thoughts on University Management"
CERI/IM/70.06, Paris, 11th June, 1970, pp. 8.

M.G. Simpson, "Planning University Development",
CERI/IM/70.07, Paris, 12th June, 1970, pp. 21.

Abdul G. Khan, "Progress Report and Programme of Work
on Institutional Management in Higher Education up to
1971", CERI/IM/70.08, Paris, 15th June, 1970, pp. 7.

J.M. Dunworth, "Cost-Effectiveness at the University of
Bradford", CERI/IM/70.09, Paris, 17th June, 1970,
pp. 9.

H.J. Rasmussen, "Status Report for the Joint Danish-O.E.C.D. University Management Project", CERI/IM/70.10, Paris, 15th June, 1970, pp. 11.

V. Brijatoff, V. Glickman, "Pilot Study on Perceptions and Attitudes towards the University Organisation Systems", CERI/IM/70.11, Paris, 15th June, 1970, pp. 43.

Abdul G. Khan, K. Legg, "A Report on the Visits to Institutions of Higher Education and Related Bodies in Canada and the United States - Part II - Factual Accounts of Visits", CERI/IM/70.12, Paris, 28th June, 1970, pp. 107.

B. Fredriksen, "Progress Report on the Questionnaire on Staff and Facilities Requirements", CERI/IM/70.14, Paris, 15th June, 1970, pp. 10.

J. Naturkrejt, "Informations sur le Problème de l'Enseignement Supérieur en France", C.E.R.I. N° 309, Paris, 5th June, 1970, pp. 50.

- Other O.E.C.D.

Directorate for Scientific Affairs

Conference on University Planning and Management Models, Paris, 21st-24th April, 1969.

R.W. Judy, J.B. Levine, R. Wilson, S.I. Centner, "Systems Analysis for Efficient Resource Allocation in Higher Education: A Report on the Development and Implementation of CAMPUS Techniques", DAS/EID/69.17, Paris, 3rd April, 1969, pp. 21.

W. Krönig, "University Information System (U.I.S.) for the Federal Republic of Germany and West Berlin", DAS/EID/69.13, Paris, 23rd April, 1969, pp. 23.

C.J. Hitch, "Rationality under Stress in Higher Education", DAS/EID/69.19, Paris, 2nd April, 1969, pp. 19.

C. Roessler, "University Administrative Data Systems", DAS/EID/69.20, Paris, 4th April, 1969, pp. 3.

K.L. Fox, "Working Group on Optimization Models for University Planning", DAS/EID/69.21, Paris, 2nd April, 1969, pp. 4, Appendix, Paris, 21st April, 1969, pp. 40, Addendum, Paris, 21st April, 1969, pp. 46.

Abdul G. Khan, "The Concept of a University: an Idealized System Versus Social Reality", DAS/EID/69.29, Paris, 21st April, 1969, pp. 23. Appendix I, pp. 21. Appendix 2, p. 8.

A. Bottomley, "Working Group on Costs and Returns per Student", DAS/EID/69.22, Paris, 2nd April, 1969, pp. 4.

N.O.A. Bullock, P.G. Dickens, J.P. Steadman, J.C. Gray, "University Planning: a Simulation Approach", DAS/EID/69.24, Paris, 4th April, 1969, pp. 29.

P. Balderston, "Planning and Analysis in the University of California", DAS/EID/69.25, Paris, 15th April, 1969, pp. 15.

O.A. Magnussen, "Working Group on a Model for the Estimation of Current Costs at an Institution of Higher Learning", DAS/EID/69.25, Paris, 15th April, 1969, pp. 14.

G. Lockwood, "Institutional Management and Planning Techniques at the University of Sussex", DAS/EID/69.28, Paris, 17th April, 1969, pp. 21.

"Report on the Findings of the Survey of Educational Models in O.E.C.D. countries", DAS/EID/69.78, Paris, 17th November, 1969, pp. 75.

Annex I, "Computer Print-Out of the Summary Tables of the Survey", Paris, 17th November, 1969, pp. 57.

Annex II, "Study of One Mathematical Model of the Education System", Paris, 17th November, 1969, pp. 25.

Annex III, "Questionnaire for the Survey of Educational Model Building in O.E.C.D. Member countries", Paris, 30th October, 1969, pp. 58.

"Directory of Current Educational Models in O.E.C.D. Member Countries", DAS/EID/69.79, Paris, November 1969, pp. 90.

"The Measurement of Scientific and Technical Activities: Proposed Standard Practice for Surveys of Research and Development, Frascati Manual", DAS/SPR/68.24, Paris, 24th March, 1970, pp. 66.

"Third International Survey of the Resources Devoted to Research and Experimental Development in 1969 by O.E.C.D. Member Countries", DAS/SPR/70.19, Paris, 11th May, 1970, pp. 36.

(ii) Other international organisations

"Planning the Development of Universities, Questionnaire",
International Institute for Educational Planning, Paris,
6th March, 1970, pp. 84.

2. Institutional Management Techniques Applied to Specific Institutions

(a) North America

(i) United States

University of California, Berkeley

F.B. Balderston, "Planning and Analysis for the University of California", OECD/DAS/EID/69.25, Paris, April 1969, pp.15.

M.S. Blumberg, "Two Year Medical Programs at the University of California", Berkeley, September 1969, pp.38.

N.H. Branchflower, "A Case Study of the Distribution of Faculty within the College of Engineering at the University of California, Berkeley, for the Period 1960-1968", Administrative Studies Project in Higher Education, Berkeley, December 1969, pp.21.

The movement of faculty within the College of Engineering at the University of California, Berkeley, is analysed for the nine-year period 1960 - 1968. Movements within the system and between the system and the outside world are assumed to be homogeneous over time. Faculty promotions and departures from various ranks are determined by aggregating yearly totals. These aggregates are then used to estimate the transition matrix of a Markov Chain model that predicts future faculty distributions based upon present distributions and known appointment policies. Predicted distributions for the years 1966 - 1968 are compared with actual data.

D. Breneman, "The Stability of Faculty Input Coefficients in Linear Workload Models of the University of California", Berkeley, April 1969, pp.24.

S.A. Hoenack, "Private Demand for Higher Education and the Efficient Allocation of Subsidies to College Students", U.S. Congress Hearings, 91st Congress, Washington, D.C. 1969, pp.32.

S.A. Hoenack, "Notes of Pricing Within the University", Office of the Vice-President, Berkeley, February 1967, pp.8.

S.A. Hoenack, "Efficient Allocations of Subsidies to College Students", Socio-Econ. Plan. Sci., Vol. 2, 1969, pp.503-512.

D.S.P. Hopkins, "An Analysis of University Year-Round Operation", Administrative Studies Project in Higher Education, Berkeley, December 1969, pp.26.

The implementation of year-round operation has often been suggested as a means for increasing the graduation rate of a university campus of fixed size. This paper demonstrates how the graduation rate may be computed as a function of the proportion of students who belong to various cohorts with common workload requirements and attendance patterns. Data gathered at the University of California Berkeley campus is then used to estimate these proportions for a campus which offers a year-round programme and does not attempt to exert control over student attendance patterns. From these estimates is derived a value for the overall graduation rate and the ratio of summer enrolment to average non-summer enrolment. These values are compared with those obtained for a campus which does not offer a year-round programme of instruction. A sensitivity analysis investigates the effect of an increasing proportion of accelerating students upon the graduation rate.

J.E. Keller, "Higher Education Objectives : Measures of Performance and Effectiveness, Berkeley, July 1969, pp.12.

J.E. Keller, "Effective Resource Allocation in Higher Education", Berkeley, October 1967, pp.19.

F.L. Leimkuhler, M.D. Cooper, "Analytical Planning for University Libraries", Berkeley, January 1970, pp.50.

A survey is made of the more important technological and managerial problems in the planning of university library services and recommendations are made for a positive programme of innovation and development. Two approaches are explored in considerable detail. The first is the use of operations research models of the acquisition and storage functions. Elementary models and decision rules, based on the assumptions of exponential growth, independence of item usage, and obsolescence, are used to minimize average costs of circulation and to suggest more general models for library services.

This is an exploratory study of the problems in library planning. This report does not pretend to offer a definitive statement on the subject; it does not provide any well-tested models, data for the design of library systems, nor a thorough analysis of jointly dependent items. It does attempt an assessment of the current state of the art and to identify some promising and different directions for the development of planning criteria and techniques of analysis.

F.L. Leimkuhler, M.D. Cooper, "Cost Accounting and Analysis for University Libraries", Berkeley, January 1970, Parts 1 and 2.

The approach to library planning studied in this Report is the use of accounting models to measure library costs and implement programme budgets. A cost-flow model for a university library is developed and tested with historical data from the Berkeley General Library. Various comparisons of an exploratory nature are made of the unit costs for different parts of the Berkeley system.

K.T. Marshall, R.M. Oliver, "A Constant Work Model for Student Attendance and Enrolment", Berkeley, February 1969, pp.18.

K.T. Marshall, R.M. Oliver, S.S. Saslow, "Undergraduate Enrolments and Attendance Patterns", Berkeley, March 1970, pp.51.

Several Markov enrolment models that have been proposed in the literature are used to predict student attendance patterns and forecast undergraduate enrolments. Theoretical results are compared with data from the Berkeley campus of the University of California for the period 1955 - 1966.

R.M. Oliver, "Models for Predicting Gross Enrolments at the University of California", Berkeley, 1968, pp.23.

R.M. Oliver, "An Equilibrium Model of Faculty Appointments, Promotions, and Quota Restrictions", Berkeley, March 1969, pp.38.

R.M. Oliver, D.S.P. Hopkins, R. Armacost, "An Academic Productivity and Planning Model for a University Campus", Berkeley, February 1970, pp.38.

This paper develops a simple deterministic model that relates student admissions and enrolments to the final demand for educated students. It includes the effects of drop-out rates and student-teacher ratios upon student enrolments, faculty staffing levels, and indices that measure academic and institutional productivity. Certain technological requirements are known and given. These, as well as the laws of flow conservation and the relationships between equilibrium inventory levels and average flow rates, are used in the model to predict the important effects of specific administrative policies and institutional controls at the campus level.

R.D. Sanderson, "The Expansion of University Facilities to Accommodate Increasing Enrolments", Berkeley, November 1969, pp.36.

A mathematical model is developed for the expansion of facilities at different campuses of the University of California for a given sequence of

enrolment forecasts. Based on total projected enrolments for the University system, the model, computes a minimum total cost expansion programme, i.e., the stages at which to expand existing campuses or to build new ones, and the enrolments that should be allocated to those campuses. It is formulated as a network flow problem in which nonzero flows on certain arcs incur fixed charges; a minimum cost flow is found by a branch-and-bound technique. The model does not include such factors as graduate-undergraduate mix, departmental mix, departmental sizes, or restrictions on tenure faculty, but rather is oriented towards a method of accommodating gross enrolments.

D. Smith, "Optimal Class Scheduling", paper presented at 55th Annual Meeting of American Association of College Registrars and Admissions Officers, Dallas, Texas, April 1969, pp.12.

R.L. Smith, "Accommodating Student Demand for Courses by Varying the Classroom Size Mix", Berkeley, April 1970, pp.25.

A statistical model is constructed that measures the ability of a given mix of classroom sizes to accommodate student demand for courses. Assuming known demand distributions, the model computes the probability that a course-to-classroom assignment can be made in such a way that the number of students assigned to any classroom does not exceed the number of seats in that classroom.

"Staff Studies conducted in the Office of Health Planning", Berkeley, undated, pp.6.

"A Program of Research in University Administration", Office of the Vice-President, Annual Report, Berkeley, October 1969, pp.24.

"Socio-Economic Characteristics of Student Groups Relevant to the Question of Equality of Access", Office of the Vice-President, Berkeley, October 1969, pp.69.

"Summary Report: The Expansion of Existing Campuses versus the Building of New Ones", Office of the Vice-President, Berkeley, September 1967, pp.4.

"A Program Budget: FY 1970-71 - FY 1973-74", Berkeley, 4th April, 1969, pp.56.

G. Weathersby, "University Cost Simulation Model", Berkeley, September 1966, pp.34.

G. Weathersby, "Student Tuition Models in Private and Higher Education", Berkeley, December 1969, pp.13.

G. Weathersby, "Decision Analysis for University and Other Public Administrators", Berkeley, November 1969, pp.27.

G. Weathersby, "Analyzing University Decision Problems", Berkeley, December 1969, pp.16.

G. Weathersby, "The Development and Applications of a University Cost Simulation Model", Berkeley, December 1969, pp.125.

G. Weathersby, "Mathematical Analysis for Public Sector Decision Problems", Berkeley, December 1969, pp.73.

G. Weathersby, "Preference Structures, Group Decision Making and Linear Systems in Public Sector Decision Analysis", Berkeley, December 1969, pp.48.

University of Cincinnati

J.V. Good, K.B. Settle, "Administrative and Organizational Relationships between Departments of Economics, Schools of Business, and other Collegiate Units, 1967", Cincinnati, Ohio, July 1967, pp.10.

University of Colorado

T.R. Mason, "The University of Colorado's CUSIM Predictive Model II, an Instructional Load Model", Boulder, Colorado, April 1969, pp.9.

Duke University

H.J. Matherly, "Student Activity Diary", Durham, North Carolina, undated.

G.R. Scott, H.H. Willard, "Computer Aided Campus Planning For Colleges and Universities", Durham, North Carolina, August 1967, pp.95.

University of Georgia

J.B. Ayers, C.E. Johnson, G.F. Shearron, "An Exemplary Program in Higher Education for Chemists, Engineers and Chemistry Teachers", Athens, Georgia, November 1969, pp.27.

J.B. Kenney, "An Investigation into the Capabilities of the Generalized Academic Situation Program (GASP) to Construct Three Kinds of Secondary School Time Tables", paper presented at Association for Educational Data Systems, New Orleans, La., 1968, pp.20.

G.C. Stock, "Fact Book", Athens, Georgia, 1st December, 1969, pp.92.

"Grant Proposal for Developing a Planning, Programming, and Budgeting System for Higher Education", Athens, Georgia, May 1969, pp.22 and appendices.

"Progress Report on the Budget Management System", Business and Finance Office, Athens, Georgia, October 1969, pp.65.

"Organization and Responsibilities", Business and Finance Office, Athens, Georgia, undated, pp.55.

"Georgia Educational Model Specifications for the Preparation of Elementary Teachers", Athens, Georgia, October 1968, pp.290.

The Georgia Educational Model programme for teacher education, (one of nine development projects funded by the Research Branch--U.S.O.E.) has developed a model for the training of elementary teachers (pre-service and inservice). Teacher performance behaviours and a teacher job analysis provide the foundation on which the model is built, and system analysis was the technique utilized for the programme.

The rationale for the development of the model is based on the hypothesis that an effective teacher education programme is built upon the job which the teacher performs. Determining what the teacher does required the sequential development of goals, objectives, and pupil learning behaviours for the elementary school. Pupil learning behaviours provided a primary basis for ascertaining teacher teaching behaviours and, consequently, a teacher job analysis. Finally, teacher performance specifications were developed that provide the objective and content for the teacher education programme.

The products of the project include, in addition to the teacher performance specifications, specifications for the selection of candidates for the programme; for evaluation of the total programme; and for implementation of a programme based on the teacher performance specifications.

"A Feasibility Study for Developing the Georgia Educational Model for Teacher Education - Elementary", Athens, Georgia, 1969, pp.110.

"The Feasibility of the Georgia Educational Model for Teacher Preparation - Elementary", Athens, Georgia, Vols. I, II, IIA, IIB, III and Summary, 1970.

"Financial Report for the Year ended 30th June, 1969", Athens, Georgia, 1969.

University of Illinois

"Systems/Program Inventory Listing", Urbana, Illinois, undated, pp.7.

Massachusetts Institute of Technology

A.E. Anstutz, K. Moore, "The Management of University Education, Research Project", Cambridge, Massachusetts, November 1969, pp.50.

D.B. Montgomery, G.L. Urban, "Marketing Decision Information Systems: an Emerging View", Working paper, Alfred P. Sloan School of Management, Cambridge, Massachusetts, March 1969, pp.37.

L.S. White, "Mathematical Programming Models for Determining Freshman Scholarship Offers", Cambridge, Massachusetts, March 1969, pp.18.

This paper is concerned with the problem of deciding how much scholarship aid to offer to each financially needy applicant who has been admitted to the freshman class of an institution of higher learning. Two quadratic programming models are developed under different assumptions with regard to non-scholarship aid. Both models relate the total expected cost of freshman scholarship support to the expected number of scholarship students and a measure of their expected quality. The models are intended to assist student aid administrators in determining reasonably successful freshman scholarship offer policies.

"Research Proposal Outline - The Management of Education", Cambridge, Massachusetts, undated, pp.57.

"A Report Prepared for the New England Association of Colleges and Secondary Schools, in Connection with the Accreditation Re-Evaluation of M.I.T.", Cambridge, Massachusetts, March-April 1963, pp.42.

University of Massachusetts

R.G. Cope, "Simulation Models should replace Formulas for University Planning and Budget Requests", College and University Business, March 1969, pp.30-34.

R.G. Cope, "A Cost Model to Replace Formulas for University Planning and Budget Requests", Amherst, Massachusetts, June 1969, pp.9 and tables.

R.G. Cope, R.G. Hewitt; "A Typology of College Student Dropouts", Amherst, Massachusetts, June 1969, pp.15 and tables.

College and university presses were found to be related to student behaviour in a followup survey of 1,131 dropouts. Many of the reasons given for dropping out could be summarized by a typology of dropouts: social, academic, family, religious, and others. The typology may have broad meaning for researchers, faculty, students, administrators, and others having responsibilities for higher education.

R.C. Hewitt, "On Developing a List of Institutions Compared to the University of Massachusetts", Amherst, Massachusetts, November 1967 -- February 1968, pp.14 and appendices.

H. Hills Skilling, "Manual for Computer Class Scheduling", Amherst, Massachusetts, April 1963, pp.13.

H. Hills Skilling, "Computer Class Scheduling", Amherst, Massachusetts, May 1967, pp.73 and appendices.

T. Jakubowski, H.R. Kaplan, "Factors Influencing Student Course Evaluation and Proposals of Curriculum Reform", Amherst, Massachusetts, June 1969, pp.16.

G.B. Ogden, "The Effect of Modified Class Scheduling on Student Alienation", Office of Institutional Studies, Amherst, Massachusetts, June 1969, pp.6 and tables.

W. Starkweather, "An Admissions Data Processing System", Amherst, Massachusetts, December 1964, pp.44.

"Report to the Governor of Massachusetts on the University of Massachusetts Medical School", 2nd June, 1969, pp.100 and tables.

University of Michigan

T.H. Drews, "The Size of Classes, Fall Term 1964-65", Ann Arbor, Michigan, July 1965, pp.104.

T.H. Drews, "The Professional Activities of the Teaching Staff, Fall Term 1964-65", Ann Arbor, Michigan, October 1965, pp.53.

T.H. Drews, S. Martin, "Appropriations to Higher Education in Fifty States for the Years 1956-57, 1963-64, and 1964-65", Ann Arbor, Michigan, July 1965, pp.54.

T.H. Drews, P.F. Mertins, L.D. Thomas, "Student Credit Hours and Direct Costs in Schools and Colleges, Fall Term 1964-65", Ann Arbor, Michigan, July 1965, pp.121.

"Student Data File now in Preparation", University Record, Ann Arbor, 6th February, 1969, pp.1-2.

Higher Education Committee - Nevada

"Nevada Higher Education to 1980 -- A Study of Long-Range Needs for Higher Education in Nevada", Vol. 1, Reno, Nevada, December 1968, pp.63.

New York University

J.M. Hester, "Budget Estimates for 1969-70", New York, April 1969, pp.8.

Ohio State University

R.W. Brady, G.W. Baughman, "University Program Budgeting", Columbus, Ohio, June 1968, pp.9.

"U.M.I.C.S., The Ohio State University, A University Management Information and Control System", Columbus, Ohio, Undated, pp.30.

Inter-University Council of Ohio "Faculty Load Study", Cleveland, Ohio, January 1970, pp.79.

Oklahoma State Regents for Higher Education

"Capital Improvements Program: The Oklahoma State System of Higher Education, 1965-1975", Oklahoma City, February 1968, pp.33.

Park College

"CAP:SC, Computer-Assisted Planning for Small Colleges - Project Final", Kansas City, Missouri, 1968, pp.13.

University of Pennsylvania

"General Design for an Education Planning-Programming-Budgeting System", Fels Institute of Local and State Government, University Park, Pennsylvania, June 1968, pp.159.

University of Pittsburgh

S. Brovender, "Interactions between Departments and Programs in Analyzing a University as an Economic Unit: the University of Pittsburgh in the 1960's", (dissertation abstract), Pittsburgh, 1970, pp.3.

A.G. Holzman, I.B. Turksen, "A Computerized Student Information System for Engineering Schools", Pittsburgh, undated, pp.15.

Planning for Future Capital Requirements - Technical Reports

Deeter Ritchey Sippel, "Planning for Future Capital Requirements - Space Use Analysis", Pittsburgh, 1969, pp.100.

- " " Sippel, "Planning for Future Capital Requirements, Population Analysis", Pittsburgh, 1969, pp.21.
- " " Sippel, "Planning for Future Capital Requirements - Tabulation of Questionnaire", Pittsburgh, 1969, pp.140.
- " " Sippel, "Planning for Future Capital Requirements - Educational Program Analysis", Pittsburgh, 1969, pp.53.
- " " Sippel, "Planning for Future Capital Requirements - Teaching Facilities Analysis", Pittsburgh, 1969, pp.26 and appendices.
- " " Sippel, "Planning for Future Capital Requirements - Building Program", Pittsburgh, 1969, pp.70.
- " " Sippel, "Planning for Future Capital Requirements - Housing Analysis", Pittsburgh, 1969, pp.24.
- " " Sippel, "Planning for Future Capital Requirements - Landscape Analysis", Pittsburgh, 1969, pp.19.
- " " Sippel, "Planning for Future Capital Requirements - Design Analysis and Proposals", Pittsburgh, 1969, pp.50.
- " " Sippel, "Planning for Future Capital Requirements - Geological Analysis", Pittsburgh, 1969, pp.50 and appendices.
- " " Sippel, "Planning for Future Capital Requirements - Underground Utilities Analysis", Pittsburgh, 1969, pp.28 and appendices.

Deeter Ritchey Sippel, "Planning for Future Capital Requirements -- Electrical Utilities Analysis", Pittsburgh, 1969, pp.22 and appendices.

I.B. Turksen, "Micro Level Resource Allocation and Forecasting Models with an Information System for Universities", Pittsburgh, 1969, pp.358.

University of South Florida

"Program Cost Differentials at the University of South Florida", 1966-67", Tampa, Florida, June 1969, pp.63.

Stanford University

"Stanford University Financial Report 1968", Stanford, California, 1968, pp.43.

"Financial Report 1969", Stanford, California, 1969, pp.26.

"The Design and Testing of an Integrated Computer System for the Administrative Processes of the University", Stanford, California, January 1969, pp.9.

N.R. Nielsen, "Flexible Pricing: an Approach to the Allocation of Computer Resources", Stanford, California, February 1970, pp.34.

Man has been quick to apply the computer, particularly in management applications. Yet, there has been little movement in the reverse direction, bringing management techniques to bear upon the administration of computer services. For a number of reasons there has been a great reliance upon costing for the recovery of equipment and operating costs. Unfortunately, these procedures fail to address the problem of allocating the limited computer resources available.

A pricing procedure, on the other hand, addresses itself toward the effective allocation of resources, and in particular a flexible pricing procedure concerns itself with the timing with which those resources are provided. This paper discusses the considerations which are involved in developing a flexible pricing procedure to serve these purposes and describes an experiment, currently being conducted, in which such a pricing procedure is being employed in the operation of a major computer centre.

State University of New York at Stony Brook

E. James "Resource Allocation and Costs in Higher Education", Stony Brook, N.Y., November 1969, pp.16.

E. James, "Resource Allocations and Costs in Higher Education, a Progress Report", Stony Brook, N.Y., May 1970, pp.11.

Texas A. & M. University

C. Pinnel, H. Wacholder, "Guidelines for Planning Colleges and Universities", College Station, Texas, January 1968, pp.117.

Texas College and University System

"College and University Physical Plant Implementation", Houston, Texas, July 1968, pp.87.

Trenton State College

"Faculty Opinion Survey", Trenton, N.J., Fall 1968, pp.10.

"Graduate Student Opinion Survey", Trenton, N.J., Fall 1968, pp.5.

"Student Opinion Survey", Trenton, N.J., Fall 1968, pp.9.

George Washington University

"Academic Undergraduate Evaluation", Washington, D.C., April 1969, pp.309.

University of Washington

W. French, "The Academic Manpower Administration System at the University of Washington", report of the National Science Foundation, Washington, D.C., pp.28 and appendices.

R.W. Koski, "Some Experiences with Computer Applications to Campus Planning", Seattle, Washington, 1970, pp.9.

"Research Project by the College of Business Administration to Develop a Computer Program for Use in the Analysis of Future Land, Building and Staff Requirements", Long-range Planning Office, Seattle, Washington, 22nd May, 1964, pp.21 and appendices.

Wilmington College

A.J. Barwick, "Wilmington College Short-Range Enrolment Prediction Model (A Progress Report)", Wilmington, North Carolina, April 1968, pp.8 and appendices.

Yale University

"SEER - A Management Information System at Yale University", I.B.M. Application Brief, New Haven, Connecticut, undated, pp.9.

(ii) Canada

Queen's University

"Report of the Senate Timetable Committee", Kingston, April 1967, pp.50.

University of Toronto

G.C.A. Cook, A.R. Dobell, D.A.A. Stager, "Student Aid Programs", Nr. 7, Institute for the Quantitative Analysis of Social and Economic Policy, Toronto, December 1969, pp.19.

T. DaSilva, "Development of a Space Inventory at the University of Toronto", Toronto, July 1968, pp.48 and appendices.

B.L. Hansen, J.G. Barron, "Orientation Examples Showing Application of the CAMPUS Simulation Model", Toronto, December 1966, pp.4 and appendices.

B.L. Hansen, S. Sandler, "Report on a Study of Faculty Activities at the University of Toronto", Toronto, September 1967, pp.20.

R.W. Judy, "Using the CAMPUS Model", Toronto, January 1966, pp.2.

R.W. Judy, "Sources of Numeric Parameter Values for CAMPUS", Toronto, 1966, pp.15.

R.W. Judy, "Data Requirements of the CAMPUS Model", Toronto, January 1966, pp.10.

R.W. Judy, "Simulation and Rational Resource Allocation in Universities", Toronto, December 1966, pp.40.

R.W. Judy, "Systems Analysis for Efficient Resource Allocation in Higher Education", Toronto, November 1968, pp.35.

R.W. Judy, "A Research Progress Report on Systems Analysis for Efficient Resource Allocation in Higher Education", Toronto, January 1970, pp.24.

R.W. Judy, B.L. Hansen, S.I. Centner, W.G. Wolfson, "Analysis of the Effects of Formula Financing on Ontario Universities -- Part I - Summary, Analysis and Conclusions", Toronto, October 1966, pp.14.

C.L. Robinson, J.G. Barron, "Program-Based Resource Allocation Models at the University of Toronto", Toronto, May 1968, pp.54.

C.L. Robinson, J.G. Barron, "Program-Based Resource Allocation Models at the University of Toronto", Toronto, May 1969, pp. 22 and figures.

C.L. Robinson, J.B. Levine, "Analysis of Budgetary and Staffing Information in the University of Toronto", Toronto, December 1966, pp.25.

W.F. Sceviour, B.L. Hansen, "Examples Showing the Evaluation of Lecture Room Planning Decisions by the S.P.A.C.E.S. Simulation Model, Toronto, December 1967, pp.44.

A.P. Van Wijk, R.W. Judy, J.B. Levine, "The Planning Programming Budgeting System in Universities", paper presented at Institute of Management Sciences Meeting, Atlanta, Georgia, 2nd October, 1969, pp.54.

R. Wilson, W. Wolfson, S. Centner, J.R. Walter, "Systems Analysis in Health Sciences Educational Planning", The Canadian Medical Association Journal, Toronto, 100, 19th April, 1969, pp.715-723.

D.J. Youston, R.B. Royiwsky, H. Kunta, "Decision Making and University Information Systems; Analysis and Design", Toronto, 15th July, 1969, pp.175.

In December of 1968 work was begun on the Integrated Information Systems Project as part of the Ford Foundation Grant for Systems Analysis for Efficient Resource Allocation in Higher Education.

This paper contains documentation on the work accomplished as of 1st July, 1969, namely, in the areas of

- (i) University Decision Processes and Information Flows;
- (ii) General Data Sets.

Work contemplated for the future is briefly outlined as well as a general overall plan for the project development and documentation.

"The Clinical Training Model", Health Sciences/Functional Planning Unit, Toronto, 1969, pp.74.

"The Undergraduate Educational Model", Health Sciences Functional Planning Unit, Toronto, 1969, pp.109.

Office of Institutional Research, "Organization, Activities and Personnel", Toronto, December 1968.

"Research Program on Systems Analysis for Efficient Resource in Higher Education", Institute for the Quantitative Analysis of Social and Economic Policy, Toronto, May 1969, pp.16.

York University

The Administrator, Downsview, Ontario, Fall 1969, pp.17.

"Mid-Career Programme in Public Administration 1970-72",
Downsview, Ontario, 1970, pp.7.

"Questionnaire: Faculty of Administrative Studies, Course
Evaluation", Downsview, Ontario, undated, pp.6.

(b) Western Europe

Denmark

University of Copenhagen

E. Branth, "The University of Copenhagen, a Brief Survey of its Organisation and Activities", Copenhagen, 1967, pp.23.

"Københavns Universitets Kommunikationsanalyse 1968 -- Dataindsamlingen" (Data Collection), Copenhagen, October 1969, pp.21.

"Københavns Universitets Kommunikationsanalyse 1968 -- Bopættningen" (Residence), Copenhagen, October 1969, pp.25.

"Københavns Universitets Kommunikationsanalyse 1968 - Trafikken" (Traffic), Copenhagen, January 1970, pp.47.

"Student Participation and Influence in University Management today", Copenhagen, June 1969, pp.7.

"Information about the Institute for Studies in Higher Education, University of Copenhagen", undated, pp.5.

N. Hammer-Jespersen, "Analysis of the Accounts of the Institutes Attached to the Faculty of Natural Sciences at Copenhagen for the Financial Years 1967/68 and 1968/69", Copenhagen, June 1970, pp.35.

N. Hammer-Jespersen, "Analysis of the Budget Process at the Faculty of Natural Sciences", Copenhagen, March 1970, pp.35 and tables.

N. Hammer-Jespersen, "General Structure of Decision Making at the University of Copenhagen", Copenhagen, 1970, pp.10 and tables.

H.J. Rasmussen, "Analysis of Budget Process of the Faculty of Law and Social Sciences", Copenhagen, 1970, pp.16 and tables.

H.J. Rasmussen, "Proposals for a Decentralized Budget Process", Copenhagen, May 1970, pp.37.

Technical University of Denmark, Lyngby

"Past and Present Danish Activity within the University Planning and Administration Field", The Institute of Mathematical Statistics and Operations Research, The Technical University of Denmark, Lyngby, 4th November, 1969.

France

Université de Paris-Ouest, Nanterre. Various papers concerning (a) Study Plans, (b) University Organisation, (c) Election Pamphlets.

Germany

"Bericht über die Rektoratszeit 1967-68", University of Hamburg, 1968, pp.40.

"HIS-SIS-Studenten Informations System", University of Erlangen-Nürnberg, January 1970, pp.8.

"HIS-Kapazitäts-Informations-System", University of Erlangen-Nürnberg, February 1970, pp.7.

"SOS-Konzeption", University of Erlangen-Nürnberg, January 1970, pp.98.

"Struktur des HIS-LIS-Kosten-Informations-Systems", University of Erlangen-Nürnberg, 1970, pp.14 and tables.

"Struktur des HIS-LIS-Leistungs-Informations-Systems", University of Erlangen-Nürnberg, 1970, pp.10 and tables.

"Struktur des HIS-SOS-Prognosemodelles", University of Erlangen-Nürnberg, March 1970, pp.17.

"Room Inventory for Universities", Hochschul-Informations-System, Hannover, April 1970.

"Report by the Founding Committee on a University for Medicine and the Natural Sciences in Ulm", Ulm, July 1965, pp.164.

NetherlandsTechnical University of Eindhoven

"Annual Report 1965-66, 1966-67", Eindhoven, 1967.

"Year Accounts 1966", Eindhoven, September 1967.

"Financial Plan 1970-1973", Eindhoven, July 1968.

University of Groningen

"Financieel Schema 1970-1973", Groningen, 1969, pp.50.

Catholic University of Nijmegen

"Development Plan 1969-1972", Part 1 and Part 2, Nijmegen, 1969.

"Financial Plan 1970-1973", Nijmegen, 1969.

"Financial Plan 1971-1974", Nijmegen, March 1969.

J.L.M. Goossens, "Kapaciteit van een Fakulteit der Geneeskunde", Nijmegen, December 1968, pp.19 and Annexes.

"Instituut voor Toegepaste Sociologie, Bestuurstruktur K.U. Nijmegen", Nijmegen, July 1969.

"The Organisational Structure of the Catholic University", Nijmegen, October 1966.

"Questionnaire: Research Projects, Inventory of Proposed and On-Going Projects", Nijmegen, November 1969.

"University Data Comparison System Feasibility Study", Arthur D. Little, Nijmegen, 25th November, 1969, pp.25.

University of Rotterdam

"Development Plan 1969-1972", University of Economics, Rotterdam.

"Financial Plan 1971-74", University of Economics, Rotterdam.

A. Guerido, "The Planning of the New Medical Faculty of Rotterdam", Rotterdam, 1970, pp.21.

University of Utrecht

"Financial Plan 1970-1973", Utrecht, June 1968, pp.45 and tables.

Sweden

University of Stockholm

"Educational Profiles for the Faculty of Philosophy", Stockholm, November 1969, pp.32.

"Model for Program Budgeting, 1970-1971", Agricultural College, Stockholm, November 1969, pp.76.

United KingdomUniversity of Bradford

"Accounts for the Year Ended 31st July, 1968", Bradford, 1969, pp.40.

"Further Studies of a Technological University", The School of Research in Education, Bradford, 1969, Volume 1, pp.183; Volume 2, pp.364; Volume 3, pp.607.

"Proposed Development Planning Institute", Bradford, November 1968, pp.8.

"Vice-Chancellor's Report to the Second Meeting of the Court on May 1968", Bradford, 1969, pp.15 and appendices.

R.K. Khanna, A. Bottonley, "Costs and Returns on Graduates of the University of Bradford", Bradford 1969, pp.30.

University of York

"The Layman in University Government", York, June 1969, pp.5.

"The Role of Students in the Government of the University: Report of a Staff/Student Working Party", York, October 1968, pp.48.

University of Sussex

Questionnaire, November 1969.

University of Lancaster

R.H. Adelson, G. Ayres, H.D. Derbyshire, "Report to the Department of Finance on the University Merger Study", Lancaster 1969, pp.74 and tables.

E.T. Blakeman, "A University Cost Model for Lancaster", Lancaster, September 1969, pp.134.

C.F. Carter, "The Allocation of Resources in Higher Education", Lancaster, June 1969, pp.7.

C.F. Carter, "The Rearrangement of the University Year", Lancaster, 1968, pp.14.

C.F. Carter. "The Structure of University Costs", Society for Research into Higher Education, Ltd. London, March 1968, pp.16-26.

C.F. Carter. "The Utilisation of Non-Specialised Teaching Rooms", Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom, London, 1968.

(c) Documents prepared by international organisation

International Institute for Educational Planning, Paris

K. Ya. Kondrat'ev, V.A. Zubkov, V.M. Petrov, L.A. Shilov, Zhdanov State University of the Order of Lenin and the Order of the Labour Red Flag, Leningrad; Problems of Administration of the Teaching, Scientific, and Economic-Financial Activities of a University (Symposium on Planning Universities for Change, 8th June, 1969, pp.134.

3. Reference Documents

Association for Institutional Research, "An Annotated Bibliography of Institutional Research" 1967-1968, Athens, Georgia, pp.31.

Commonwealth Universities Yearbook 1969, London 1969, pp.3027.

Council of Europe, Documentation Centre for Education in Europe, News-Letter, N° 2 - 6, 1968 and Index, N° 1 - 6, 1969 and Index, N° 1 and 2, 1970, Strasbourg, France.

Educational Resources Information Centre (ERIC) Material

American Association of School Administrators, ERIC Abstracts on:

- Collective Negotiations in Education, N° 1, August 1969;
- Human Relations in Educational Administration, N° 2, August 1969;
- Programme Budgeting and Cost Analysis, N° 5, January 1970;
- Urban Crises in Educational Administration, N° 6, January 1970.

(Compiled by the ERIC Clearinghouse on Educational Administration, University of Oregon), Washington, D.C.

Current Index to Journals in Education (monthly), CCM Information Sciences, Inc., New York.

Research in Education (monthly), Washington, D.C.

Higher Education: A Bibliography of Documents Selected from Research in Education, 1968, General Bibliography N° 1, Washington, D.C. 1969, pp.79.

Higher Education: A Bibliography of Documents Selected from Research in Higher Education, 1969, General Bibliography N° 2, Washington, D.C., 1970, pp.101.

D.E. Sumner, "Urban Universities and the City", ERIC Clearinghouse on Higher Education, Washington, D.C., April 1970, pp.8.

D.C. Friedel, "An Annotated Bibliography: Cost Analysis", Operations Research Department, School of Management, Case Western Reserve University, Cleveland, Ohio, pp.46.

M. de Grandpré, "Glossaire International, Termes d'Usage Courant en Matière de Certificats d'Etudes Secondaires et de Diplômes et Grades dans l'Enseignement Supérieur dans 45 pays", UNESCO, Paris, 1969, pp.207.

International Association of Universities, "Draft Working Programme", Paris, 1969, pp.12.

International Association of Universities, International Handbook of Universities and other Institutions of Higher Education, Paris, 1968, pp.1178.

International Association of Universities, "Report of the Secretary General for the year 1968", Paris, 1968, pp.12.

International Association of Universities, Universities and Colleges of Canada, Ottawa, 1970, pp.464.

International Association of Universities, World List, Universities, Other Institutions of Higher Education, University Organisations, Paris, 1967, pp.454.

International Association of Universities, Bulletin (Quarterly) Paris.

International Standard Classification of Education (ISCED), UNESCO, Paris, May 1970, pp.50.

International Standard Classification of Education (ISCED), Provisional Short Definition Guide to some Selected Categories of the Draft Three Digit Classification", UNESCO, Paris, May 1970, pp.35.

Journal of the Administrative Data Processing Group of the International Federation for Information Processing, I.A.C. Quarterly, Amsterdam, 1969, Vol. 2, N° 4, pp.108.

A. Musso, "Review of Mathematical Models for Campus Planning", Report for C.E.R.I., Cologne, November 1969, pp.92.

National Foundation for Educational Research in England and Wales, "Current Researches in Education and Educational Psychology, 1961-1963", Occasional Publication N° 9, Upton Park, 1965, pp.80.

V.M. Petrov, "Criteria for the Evaluation of the Effectiveness of Scientific Research (translated from Russian), undated, pp.19.

G.J. Rath, "Management Science in University Operation", Management Science, Providence, R.I., Vol. 14, N° 6, February 1968.

Report from the Select Committee on Education and Science,
"Student Relations", Session 1968-69, Vol. I, II, III, IV, V,
VI, VII, London, 1969.

F.D. Rourke, G.B. Brooks, The Managerial Revolution in Higher
Education, The Johns Hopkins Press, Baltimore, Md., 1966,
pp.184.

O.A. Singletary, J.P. Newman, American Universities and Colleges,
10th Edition, Washington, D.C., 1968, pp.1782.

S. Spaulding, Programmed Instruction, an International Direc-
tory, the International Education Clearinghouse, University
of Pittsburgh, UNESCO, Paris, 1967, pp.189.

Systems Analysis for Educational Planning, Selected Annotated
Bibliography, O.E.C.D., Paris, 1969, pp.219.

A. Tracz, "A Supplement to A Selected Bibliography of the
Application of Optimal Control Theory to Economic and Business
Systems, Management Science and Operations Research", Ontario
Institute for Studies in Education, Toronto, June 1969, pp.9.

G. Wright, "A Selected Annotated Bibliography on Educational
Systems" Case Institute of Technology, Cleveland, Ohio, April
1966, pp.38.

ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

RESTRICTED

Centre for Educational Research
and Innovation

Paris, 1st September, 1970

CERI/IM/70.14 Addendum I

Engl. only

PROGRAMME ON INSTITUTIONAL MANAGEMENT

IN HIGHER EDUCATION

(Joint Project CERI XVII)

List of Documents

(Note by the Secretariat)

This Addendum was compiled by Madame Viviane Pougères, Consultant to the Centre for Educational Research and Innovation, under the supervision of Dr. Abdul G. Khan of the C.E.R.I. Secretariat. The current list is the first bi-monthly supplement to the List of Documents issued on 1st July, 1970.

CLASSIFICATION OF DOCUMENTS

1. Higher Education, Planning, Management and Organisation

- (a) North America
 - (i) United States
 - (ii) Canada
- (b) Western Europe
- (c) Documents prepared by international organisations:
 - (i) Organisation for Economic Co-operation and Development
 - Centre for Educational Research and Innovation, Institutional Management in Higher Education
 - Other C.E.C.D.
 - (ii) Other international organisations

(In this section, the documents are listed alphabetically by authors except where the document is clearly identified as an institutional effort).

2. Institutional Management Techniques Applied to Specific Institutions

- (a) North America
 - (i) United States
 - (ii) Canada
- (b) Western Europe
- (c) Documents prepared by international organisations.

(In this section, the documents are generally listed alphabetically by institution. Wherever institutional identification was not possible, the documents are listed by country).

3. Reference Documents

In this section, documents are listed alphabetically by author.

TABLE OF CONTENTS

	<u>Page</u>
1. <u>Higher Education Planning, Management and Organisation</u>	
(a) North America	3
(i) United States.....	3
(ii) Canada.....	3
(b) Western Europe.....	4
(c) Documents prepared by international organisations.....	5
2. <u>Institutional Management Techniques Applied to Specific Institutions</u>	
(a) North America.....	6
(i) United States.....	6
(b) Western Europe.....	6
3. <u>Reference Documents</u>	

1. Higher Education Planning, Management and Organisation

(a) North America

(i) United States

The Assembly on University Goals and Governance (Prospectus), Buffalo, N.Y., November, 1969, pp.15.

CAUDILL, ROWLETT, SCOTT, "Determination of Space Requirements for Colleges and Universities", Houston, Texas, 1968, pp.39.

DREW, D.E., "A Profile of the Jewish Freshman", ACE Research Reports, Vol.5., no.4., 1970, Washington D.C., pp.53.

LOCKARD, J.D., ed. "Seventh Report of the International Clearinghouse on Science and Mathematics Curricular Developments 1970", Washington D.C. 1970, pp.640.

National Science Foundation

Associated Universities, Inc., "Feasibility Study and Recommended Plan for Establishing an Institute for Information Systems in Higher Education", Washington D.C., June 1969, pp.300.

RADNER, R., MILLER, L.S., "Resource Requirements for a Universal Two-Year College Program", Carnegie Commission on the Future of Higher Education, Berkeley, California, February 1969, pp.80.

ROURKE, F.E., BROCKS, C.E., "The Managerial Revolution in Higher Education", Administrative Science Quarterly, Cornell University, Ithaca, New York, Vol.9. no.2., September 1964.

(ii) Canada

PROULX, P.P., "Collective Negotiations in Higher Education - Canada", paper presented at the National Conference on the Collective Negotiations in Higher Education, New York, May 1970, pp.29.

PROULX, P.P., "Simulation Modelling of Academic Salaries", Conference on Canadian University Planning, Lakehead Port Arthur, Ontario, May 26th, 1970., pp.23.

PROULX, P.P., "Programme de Recherche de la Conférence des Recteurs et des Principaux des Universités du Québec", Winnipeg, May 1970, pp.9.

(b) Western Europe

Standing Conference of Rectors and Vice-Chancellors of European Universities, "The Optimum and Maximum Size of the University", Göttingen, 1964, pp.363.

Standing Conference of Rectors and Vice-Chancellors of European Universities, "The Universities Europe", Bad Godesberg, 1964, pp.840.

Germany

Arbeitsgruppe für empirische Bildungsforschung, "Deskription von Schulsystemen", Heidelberg, March 1970, (Vol.3.) pp.45.

Der Bundesminister für Bildung und Wissenschaft, "Bildungsbericht '70 - Breicht der Bundesregierung zur Bildungspolitik", Bonn, June 1970, pp.156.

Der Bundesminister für Bildung und Wissenschaft, "Entwurf eines Hochschulrahmengesetzes", Bonn, July 1970, pp.36.

Der Bundesminister für Bildung und Wissenschaft, "Thesen zum Hochschulrahmen gesetz", Bonn, undated, pp.27.

Ständige Konferenz der Kultusminister des Länder in der Bundesrepublik Deutschland, "Der Personelle Ausbau des Universitäten 1960 bis 1968", Bonn, 1970, pp.89.

Netherlands

Netherlands Central Bureau of Statistics, "Analysis of Student Performance", Statistical Investigations on Education and Leisure, no.1., The Hague, 1965, pp.40.

United Kingdom

BURHOF, E.H.S., "Outlook for the Universities", New Scientist, London, June 11th, 1970., pp.517-519.

DAVIES, J.L., "The Government of Colleges", London, undated, pp.15.

Universities Grants Committee, "Academic Year 1969-70 - Form 1 - Staff", London, undated, pp.38.

Universities Grants Committee, "Academic Year 1969-70 - Form 2 - Students", London, undated, pp.95.

Universities Grants Committee, "Academic Year 1968-69 - Form 3 - Finance", London, July 1968, pp.3. and tables.

Working Group on F.E. Student Statistics, First Report, "The Individualised Data (I.D.) System for Records of Further Education Students", London, August 1968, Revised May 1969, pp.29. and appendices.

Yugoslavia

XVth International Seminar "University Today", sponsored by the League of Yugoslav Universities, Dubrovnik, 15-25th August, 1970, Various papers.

HAN, S., "Some Questions Raised in the Higher Education of Economists and Managers", Subotica, August 1970, pp.21.

(c) Documents prepared by international organisations

Organisation for Economic Co-operation and Development - Centre for Educational Research and Innovation

"Workshop on the Nature of the Curriculum for the Eighties and Onwards", Kassel, 28th June - 4th July, 1970, CERI/CT/CD/70.02.

KHAN, A.G., "The CERI and Innovations in the Universities", talk given at the OECD for visitors from the Foreign Policy Association of Colorado, August 13th, 1970, pp.8.

KHAN, A.G., "Systems Models for University Activities", paper delivered at the XVth International Seminar "University Today", Dubrovnik, August 1970, pp.15.

Others

Council for Cultural Co-operation of the Council of Europe, Education in Europe, Section I, Higher Education and Research, "Structure of University Staff", Strasbourg, 1966, pp.148.

International Baccalaureate Office, "Syllabuses 1970/71", Geneva, May 1969, pp.48. (in English and French).

International Baccalaureate Office, Semi-Annual Bulletin, Geneva, no.1., November 1968, no.2., May 1969.

UNESCO, "The Statistical Measurement of Educational Wastage", International Conference on Education, Geneva, 1st - 9th July, 1970, Paris, June 1970, pp.32. and Appendices.

2. Institutional Management Techniques Applied to Specific Institutions

(a) North America

(i) United States

University of California

BALDERSTON, F.E., "Thinking about the Outputs of Higher Education", Berkeley, California, May 1970, pp.15.

BARTHOLOMEW, L.J., "A Mathematical Analysis of Structural Control in a Graded Manpower System", Berkeley, California, December 1969, pp.54.

BRENNEMAN, D.W., "An Economic Theory of Ph.D. Production: The Case at Berkeley", Berkeley, California, June 1970, pp.75.

KELLER, J.E., "Higher Education Objectives: Measures of Performance and Effectiveness", Berkeley, California, May 1970, pp.16.

WEATHERSBY, G.B., "Educational Planning and Decision-Making: The Use of Decision and Control Analysis", Berkeley, California, May 1970, pp.19.

"Status Report, Carnegie Commission Projects", Carnegie Commission on Higher Education, Berkeley, California, April 1970, pp.25.

State University of New York, Stony Brook

JAMES, E., "Resources Allocation in Higher Education - Appendix B: Methods of Resources Allocation and Measurement", Stony Brook, New York, May 1970, pp.30.

JAMES, E., "Some Notes on the Faculty Resource at a University", Stony Brook, New York, May 1970, pp.15.

(b) Western Europe

(i) United Kingdom

University of Bradford

KHANNA, R.K., "Model for a Cost Analysis of Undergraduate Education", Bradford, undated, pp.44.

3. Reference Documents

CCDN (Neutron Data Compilation Centre), Vienna

CCDN (Neutron Data Compilation Centre), "CINDA Reader's Manual", CCDN-C1/21, Vienna, January 1968, pp.35.

CINDA Newsletter, Nos. 1 - 11.

CINDA 68 Supplement, "An Index to the Literature on Microscopic Neutron Data", January 1969, pp.181.

RENDA, "Compilation of EANDC Requests for Neutron Data Measurements", December 1968, pp.218.

RENDA System Description, November 1968, pp.87.

E.R.I.C. (Educational Resources Information Center)

"Impact of Racial Issues on Educational Administration", compiled by the ERIC Clearinghouse on Educational Administration, University of Oregon, Eugene, Oregon, January 1970, pp.26.

E.R.I.C. Clearinghouse on Higher Education

Compendium Series of Current Research, Programs and Proposals no.1., "Governance", Washington D.C., May 1970, pp.23.

LINGER, F.W., "Professional Problems: Preparation for a Career in College Teaching", Washington D.C., April 1970, pp.8.

RICHARDS, J.H., "Assessing Student Performance in College", Report no.2., Washington D.C., May 1970, pp.12.

ROBINSON, L.H., SHOENFELD, J.D., "Student Participation in Academic Governance", Review 1, Washington D.C., February 1970. pp.26.

"Forthcoming International Scientific and Technical Conferences", July 1970 - March 1980, London, July 1970, pp.222.

O.E.C.D. Economic and Social Development "Aligned List of Descriptors, 1969 Ed., Paris - Annexes - Alphabetical Order (French, English, German).

ONISEP (Office National d'Information sur les Enseignements et les Professions), "Les Nouvelles Universités de Paris", Rentrée 1970, pp.48.

U.N.E.S.C.O.

International Standard Classification of Education (ISCED),
"Revised Two Digit Classification System", ISCED/2, Paris,
May 1970, pp.9.

International Classification of Education (ISCED), "Provisional
Three Digit ISCED Classification", ISCED/3, Paris, May 1970,
pp.45.

International Classification of Education (ISCED), "Provisional
Short Definition Guide to Some Selected Categories of the
Draft Three Digit Classification - to be used in conjunction
with Document ISCED 3", Paris, May 1970, pp.35.

The World of Learning 1968-69, Europa Publications, ed.,
London 1969, pp.1757.